REMARKS

In the outstanding Office Action, claims 25-35 were rejected under 35 U.S.C. §103(a) over SATO (U.S. Patent No. 5,956,328), in view of Applicant's disclosed prior art.

Initially, Applicant notes once again that the basis of the rejection of claims 25-35 is not entirely clear. In this regard, while the Office Action indicates at page 2 that claims 25-35 were rejected under 35 U.S.C. §103(a) over SATO, in view of Applicant's disclosed prior art, the new Office Action again refers at page 4 to OMORI (U.S. Patent No. 6,239,666). Nevertheless, it is believed that claims 25-35 were rejected only under 35 U.S.C. §103(a) over SATO, in view of Applicant's disclosed prior art, and the herein-contained remarks are limited to a discussion of SATO and Applicant's disclosed prior art. Accordingly, if OMORI is applied in any rejection of claims 25-35 in the next Office Action, such a rejection should be considered new and the next Office Action should not be made final.

Independent claims 25, 26, 28 and 32 are allowable over SATO in view of Applicant's disclosed prior art. In this regard, independent claim 25 recites, *inter alia*:

A phase offset calculator, comprising: a sign inverter that inverts a sign of signed binary data to obtain a first phase offset of a multiple of 90°; an amplitude adjuster that adjusts an amplitude of a signal output from the sign inverter; and a phase offsetter that provides a second phase offset smaller than 90° to a signal output from the amplitude adjuster.

Independent claim 26 recites, *inter alia*:

A signal point mapper for mapping a QPSK modulation signal in a phase space, comprising: a sign inverter that inverts a sign of the QPSK modulation signal to obtain a first phase offset of a multiple of 90°; an amplitude adjuster that adjusts an amplitude of a signal output from the sign inverter; and a phase offsetter that provides a second phase offset smaller than 90° to a signal output from the amplitude adjuster.

Independent claim 28 recites, *inter alia*:

A CDMA transmission apparatus for controlling a phase and amplitude of a transmission signal by closed-loop control, comprising: a signal point mapper having: a sign inverter that inverts a sign of a QPSK modulation signal to obtain a first phase offset of a multiple of 90°; an amplitude adjuster that adjusts an amplitude of a signal output from the sign inverter; and a phase offsetter that calculates a second phase offset smaller than 90° with a signal output from the amplitude adjuster; and a transmission controller that provides control information to the signal point mapper based on a message included in a reception signal from a receiver that receives communication signals from the CDMA transmission apparatus.

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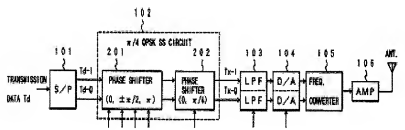
Independent claim 32 recites, *inter alia*:

A transmit diversity method that implements closed loop transmit diversity for controlling a phase and amplitude of a transmission signal from a transmitter based on a message from a receiver that receives the transmission signal from the transmitter, comprising: inverting a sign of a QPSK modulation signal to obtain a first phase offset of a multiple of 90°; adjusting an amplitude of the QPSK modulation signal after the sign inversion; and calculating a second phase offset smaller than 90° with the QPSK modulation signal after the amplitude adjusting.

As set forth above, each of independent claims 25, 26, 28 and 32 includes features relating to amplitude adjustment after sign inversion to obtain a first phase offset, and before phase offsetting by a second phase offset smaller than 90°.

Cited portions of Figures 1 and 2 of SATO follow:

FIG. 1



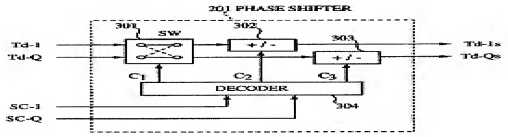


FIG. 2

Figure 4B from the publication of the present application (i.e., U.S. Patent Application Publication No. 2002-0075970) is reproduced below:

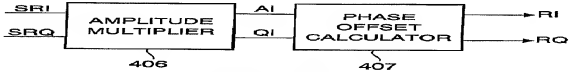
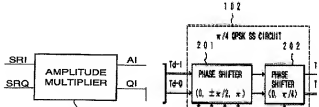


FIG. 4B
(PRIOR ART)

Figure 4B from the publication of the present application (i.e., U.S. Patent Application Publication No. 2002-0075970) is described at paragraph [0070], reproduced as follows:

> **[0070] FIG. 4B shows a configuration (conventional example) in which a desired phase offset is given by phase offset calculator 407 alone without using the present invention.**

Accordingly, modification of SATO with teachings of Applicant's disclosed prior art would result in a configuration as follows:



That is, as can be seen in Figure 4B and described in paragraph [0070] of the publication of the present application in relation to the disclosed prior art, the desired phase offset of the

disclosed prior art is given by phase offset calculator 407. Accordingly, phase offset calculator 407 in the disclosed prior art is analogous to element 102 in SATO, and would analogously include both elements 201 and 202.

As can also be seen in Figure 4B of the publication of the present application in relation to the disclosed prior art, phase control was performed after amplitude adjustment (see elements 406 and 407) entirely in the conventional art. Elements 201 and 202 of element 102 in SATO (see Figures 1 and 2) are directed only to features of phase control, and not to amplitude adjustment, and are therefore consistent with and analogous to phase offset calculator 407.

Thus, modification of SATO with Applicant's disclosed prior would result in a configuration as shown above, and not in amplitude adjustment after sign inversion to obtain a first phase offset. Applicant's disclosed prior art specifically teaches that amplitude adjustment is conventionally performed before phase control, and modification of SATO with the disclosed prior art shown in Figure 4B would not result in amplitude adjustment after any aspect of phase control.

Similarly, modification of SATO with Applicant's disclosed prior art would not result in amplitude adjustment between phase offsets by elements 201 and 202 in SATO. Rather, the combination of SATO and Applicant's disclosed prior art would result in phase offset calculator 407 as in Applicant's disclosed prior art being placed before elements 201 and 202 as in SATO. There is simply no teaching in SATO or Applicant's disclosed prior art of phase offsetting occurring before amplitude adjustment. Accordingly, the combination of SATO and Applicant's disclosed prior art does not render obvious the combinations recited in Applicant's independent claims.

That is, as described above, all amplitude adjustment in a modified SATO would still occur before phase shifting, particularly in view of Applicant's disclosure at paragraph [0070] that a desired phase offset is given by phase offset calculator 407 **alone** (emphasis added).

As noted in Applicant's immediate prior Response, any interpretation of SATO, in view of Applicant's disclosed prior art, as rendering obvious the combination recited in Applicant's claims 25, 26, 28 and 32, is inconsistent with Applicant's disclosed prior art as set forth in the specification and Figure 4B.

The Office Action asserts that the combination of SATO and Applicant's disclosed prior art would somehow lead to the features recited in claims 25, 26, 28 and 32, including amplitude adjustment after sign inversion to obtain a first phase offset. However, there is no teaching in SATO or Applicant's disclosed prior art of amplitude adjustment after sign inversion to obtain a first phase offset, and any such interpretation of SATO and Applicant's disclosed prior art as rendering obvious claims 25, 26, 28 and 32 is inconsistent with the specification.

As described above, the outstanding rejection under 35 U.S.C. §103(a) fails to establish a prima-facie obviousness rejection using the obviousness factors set forth in Graham v. John Deere Co., 383 U.S. 1 (1966). In this regard, the Office Action fails to determine the scope and content of the prior art (which fails to show amplitude adjustment after any aspect of phase control), fails to properly ascertain (or acknowledge) differences between the prior art (which fails to show amplitude adjustment after any aspect of phase control) and the claims at issue (which specify amplitude adjustment after an aspect of phase control), and fails to resolve the level of ordinary skill in the pertinent art. See KSR Int'l v. Teleflex Inc., 82 USPQ2d 1385, 1391(2007). More particularly, the Office Action fails in any way to address how modification

of SATO with the teachings of Applicant's disclosed prior art would result in amplitude adjustment after sign inversion to obtain a first phase offset.

Therefore, modification of SATO with Applicant's disclosed prior art would result in amplitude adjustment before phase control, and not after sign inversion to obtain a first phase offset. Accordingly, SATO and Applicant's disclosed prior art do not support the rejection of claims 25, 26, 28 and 32 at least because no teaching in SATO or Applicant's disclosed prior art includes amplitude adjustment after sign inversion to obtain a first phase offset, let alone amplitude adjustment between two stages of phase offsetting.

Therefore, the rejection of claims 25, 26, 28 and 32 is improper, at least for each of the reasons set forth above.

Additionally, each of independent claim 28 and independent claim 33 recite features of controlling the second phase offsetting based on a signal from a remote source (in claim 28 "a message included in a reception signal from a receiver that receives communication signals" from the claimed CDMA transmission apparatus). In this regard, claim 28 is reproduced above, and claim 33 recites, *inter alia*:

A phase offsetter, comprising: a sign inverter that inverts a sign of signed binary data to obtain a first phase offset of a multiple of 90°; and a phase shifter that calculates a phase shift to provide the sign-inverted signed binary data a phase offset smaller than 90°, and that provides the sign-inverted signed binary data the phase offset smaller than 90° based on a control signal from a remote source.

The Office Action does not cite any teaching of SATO or Applicant's disclosed prior art as disclosing controlling the second phase offsetting based on a signal from a remote source. Indeed, the Office Action acknowledges at page 5 with respect to claim 28 and at page 7 with respect to claim 33 that SATO fails to disclose these features. Accordingly, the rejection of claims 28 and 33 does not properly establish that SATO as modified by Applicant's disclosed

prior art would result in the combinations of claims 28 and 33, including controlling the second phase offsetting based on a signal from a remote source.

Accordingly, the rejection of claims 28 and 33 is improper, at least for each of the additional reasons set forth above.

At least for each and all of the reasons set forth above, each of the independent claims now pending is allowable over SATO and/or Applicant's disclosed prior art, whether considered alone or in any proper combination. Further, each of the pending dependent claims is allowable at least for depending, directly or indirectly, from an allowable independent claim, as well as for additional reasons related to their own recitations including those previously set forth in the Response filed on June 12, 2007.

Accordingly, at least for each and all of the reasons set forth above, reconsideration and withdrawal of the outstanding rejection is respectfully requested.

Should there be any questions, any representative of the U.S. Patent and Trademark Office is invited to contact the undersigned at the telephone number provided below.

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August 7, 2008
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